



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/059,982	01/29/2002	Danielle A. Thomas	98-C-152C1 (STMI01-00043)	8483
30425	7590	08/06/2004	EXAMINER	
STMICROELECTRONICS, INC. MAIL STATION 2346 1310 ELECTRONICS DRIVE CARROLLTON, TX 75006			TRINH, HOA B	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 08/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/059,982

Applicant(s)

THOMAS, DANIELLE A.

Examiner

Vikki H Trinh

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 14-27 is/are pending in the application.
- 4a) Of the above claim(s) 9,22 and 23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8,14-21 and 24-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2814

DETAILED ACTION

Election/Restrictions

1. Claims 9 and 22-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Species II, fig. 3, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 06/21/04.
2. Applicant's election with traverse of Species I in the reply filed on 06/21/04 is acknowledged. The traversal is on the ground(s) that the examiner merely stated that the species are distinct. This is not found persuasive because Species I and Species II, as shown in the drawings particularly fig. 1C and fig. 3, are different and distinct from one another.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-8, 14-21, 24-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Joshi et al. (5,955,781)

As to claims 1, 6, an integrated circuit structure having a capacitive electrode 242 proximate to a sensing surface 210 on which an object is placed, the capacitive electrode forms a

Art Unit: 2814

capacitor (fig. 7) with the object; a dielectric 222 (col. 7, line 29) underlying the electrode 242; and an active region 230, 232 underlying the dielectric 222, wherein the electrode 242 and all conductive regions 206, 204 are formed of a conductive material, tungsten (col. 7, lines 60-63).

As to claim 2, the electrode 242 and the conductive region 206 are formed of a conductive material that is as great as a hardness of the dielectric 222.

As to claims 3, 16, 25, a passivation layer over the electrode 242, the passivation layer forming the sensing surface 214 (fig. 7), wherein the electrode 242 and the conductive regions 206 are formed of material that is as great as a hardness of the passivation layer. (col. 6, lines 35-46).

As to claims 5, 18-19, the structure includes a tungsten via which includes the interconnect 206 (fig. 7).

As to claims 7, 20, the structure includes a tungsten contact 206. (fig. 7).

As to claims 8, 21, the active region 204 is a gate electrode (col. 6, lines 35-45).

As to claims 14-15, 17, a method of forming a scratch resistant integrated circuit having the steps of forming an active region 204, 230, 232; forming a dielectric 222 (col. 7, line 29) overlying the active region; and forming an electrode 242 overlying the dielectric 222 (silicon dioxide) proximate to a sensing surface 210; the electrode 242 and the conductive region 206 are formed of tungsten which is harder than aluminum or silicon dioxide layer 222. See fig. 7.

As to claims 24, 26, a method of forming a scratch resistant integrated circuit structure having a plurality of active regions 230, 232 (fig. 7), forming a dielectric 222 (fig. 7) over the plurality active regions; and forming an array of capacitive electrodes 204 (fig. 7) made of tungsten (col. 6, lines 40-45) overlying the dielectric proximate to a sensing surface 210 (fig. 7)

Art Unit: 2814

on which an object 208 is selectively placed, the capacitive electrodes 204 (fig. 7) each forming a capacitor (col. 6, lines 35-40) with the object when the object is placed on the sensing surface 210 and wherein the capacitive electrodes 204 (fig. 7) are each formed of a conductive material (col. 6, lines 40-45) having a hardness at least as great as a hardness of the dielectric. The examiner note that the dielectric layer is made of silicon dioxide and the conductive material is made of tungsten and/or its alloys. (col. 6, lines 40-45)

As to claim 27, the method includes forming each metallization region 206 (tungsten) between the array of electrodes 204 and the plurality of the active regions 204, 230, 232 of a conductive material having the hardness at least as great as the hardness of the dielectric 222 (col.7, line 29)(silicon dioxide).

Conclusion

1. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Vikki Trinh whose telephone number is (571) 272-1719. The Examiner can normally be reached Mon-Tuesday, Thurs-Friday, 7:30 AM - 6:00 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Wael Fahmy, can be reached at (571) 272-1705.

Vikki Trinh,
Patent Examiner
AU 2814



LONG PHAM
PRIMARY EXAMINER